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Nikon Speedlight

SB-12

INSTRUCTION MANUAL

NOMENCLATURE

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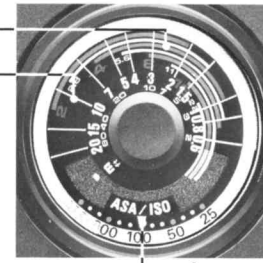
① Auto shooting range indicators

② Distance scale (white)

③ Exposure calculator dial



④ Flash head

⑤ Battery chamber with battery chamber lid

⑥ ASA/ISO film speed index

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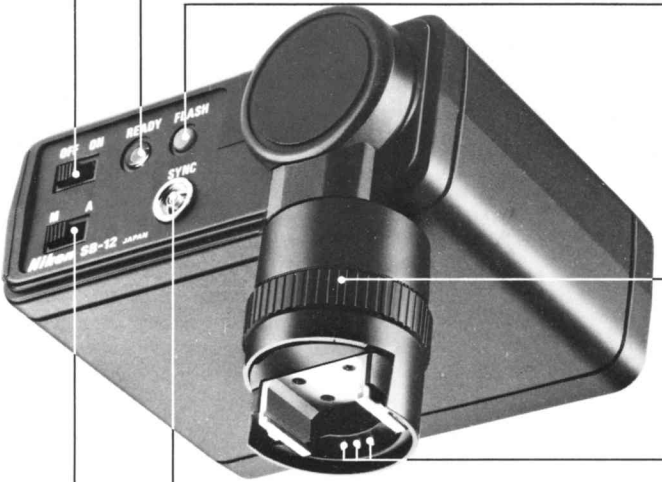

Power switch ⑦

Ready-light ⑧

Open-flash button ⑨

Mounting foot with locking ring ⑩

Contact pins ⑪

Sync socket ⑫

Shooting mode selector ⑬

CONTENTS

FOREWORD

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Designed exclusively for the Nikon F3, the SB-12 Speedlight is a direct-mounting electronic flash unit providing automatic TTL control of the flash exposure. Because the light is measured through the lens, you are assured of perfectly exposed flash pictures with a wide variety of lenses and accessory attachments for the camera. By using a silicon-controlled rectifier and series circuitry, the speedlight is able to save its excess energy for the next shot thus reducing recycling time. Even though the SB-12 is as automatic as they come, it is still a good idea to familiarize yourself with the unit's basic operation as presented in the first section. For more detailed information, please refer to "Controls in Detail." A few minutes wisely invested now will pay off later in years of rewarding photographic experiences.

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1. Open the battery chamber ⑤.
Slide the lid in the direction of the arrow.

2. Load the batteries.
Following the + and − symbols on the inside of the chamber, load four AA-type penlight batteries into the chamber.

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3. Close the battery chamber.
Slide the lid back into place.

4. Attach the speedlight to the camera's accessory shoe.
First rotate the speedlight's locking ring ⑩ counterclockwise to uncover the mounting foot. Then slip the mounting foot onto the camera's accessory shoe from the front.

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5. Lock the speedlight securely into place.

Rotate the locking ring clockwise until it stops.

6. Rotate the flash head ④.

Turn the flash head 90° so that the calculator dial ③ is on top.

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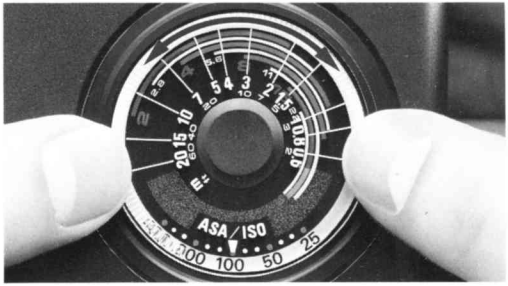
7. Set the shooting mode selector ⑬ to "A."



8. Set the exposure calculator dial ③.

Turn the dial until the ASA/ISO index ⑥ is opposite the speed of the film in use. Note the color-coded f/numbers which appear on the left side of the color-coded lines ①. These lines indicate the range of camera-to-subject distance in which the correct flash exposure can be obtained. For example, if you're using ASA/ISO 100 film and select f/4, the automatic shooting range is indicated by an orange line. Thus, you can shoot any subject located between approx. 1 and 6 meters (approx. 3 and 20 feet) away from the camera.

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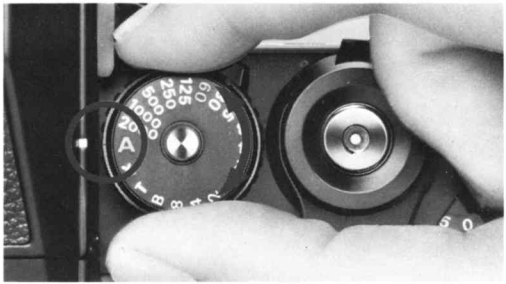
9. Set the lens aperture ring to an appropriate f/number.

Referring to the calculator dial, select an f/number which is appropriate for the camera-to-subject distance; then set this f/number on the lens. Any aperture can be used as long as the subject is within the automatic shooting range.



10. Set the shutter speed dial to "A."

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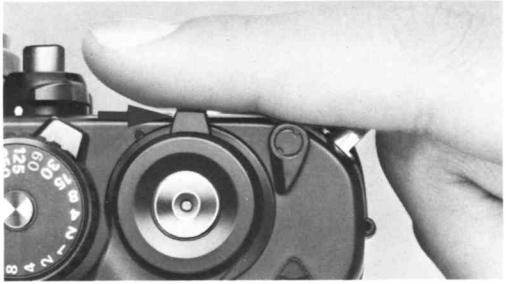

11. Turn on the camera.

Move the power switch to the right to uncover the red mark.

12. Turn on the speedlight.

Slide the power switch ⑦ to the right to uncover the red mark.

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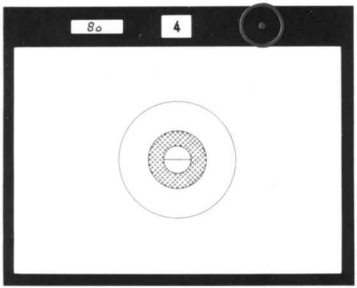

13. Look into the viewfinder.

As soon as the LED ready-light comes on, the flash is ready to fire. If you depress the shutter button halfway, you'll notice that the LCD displays 80 indicating that the proper synchronization speed of 1/80 sec. has been automatically set by the speedlight.

14. Take the picture.

If the LED ready-light ⑧ does not blink, then you have a perfect flash exposure.

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15. Turn off the speedlight.

To conserve battery power between shooting sessions, slide the power switch to the left.

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Mounting Foot ⑩

The SB-12 features a mounting foot designed for exclusive use with the F3's new accessory shoe. Inside the foot are three pins ⑪ which make contact with the three electrical contacts on the accessory shoe. They provide: 1) direct synchronization contact between the flash unit and the camera; 2) LED ready-light signal transmission, plus auto switching to the proper synchronization speed of 1/80 sec. with the camera on "AUTO", or manually set to 1/125 sec. or above; and 3) through-the-lens control of the flash exposure using the camera's SPD metering cell as the auto sensor.

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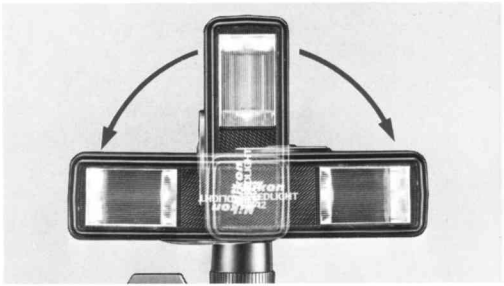

Flash Head ④

The SB-12's flash head rotates through an arc of 180° with click-stops every 90°. With the speedlight unit mounted on the camera, it is recommended to turn the flash head to the horizontal position (with the calculator dial on top) to insure adequate coverage when using wideangle lenses. In this position, the angle of coverage is 56° horizontal and 40° vertical allowing the SB-12 to be used with a 35mm wideangle lens. With the optional Wide-Flash Adapter SW-4, coverage is wide enough for a 28mm lens. Using the SB-12 in the vertical position is generally not recommended, since this will result in inadequate coverage with light fall-off in the corners of the frame. The color temperature of the SB-12's light output makes it suitable for use with daylight-type color film.

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Shooting Mode Selector ⑬

On Auto

To shoot on Auto, slide the shooting mode selector to "A." The SB-12 is able to vary its light output automatically to match the camera-to-subject distance. The farther away the subject is, the more light is emitted; the closer the subject, the less light is given off. In addition, recycling time varies with distance. The closer the subject, the shorter the recycling time and vice versa.

On Manual

The SB-12 incorporates an override for manual control. You can use it in situations requiring a regular electronic flash unit. To use, slide the shooting mode selector to "M." Then the SB-12 will fire at its maximum light output.

Flash synchronization

As soon as the SB-12 is mounted onto the F3's accessory shoe and turned on, the shutter speed is automatically switched to the proper synchronization speed of 1/80 sec. This is the case when the shutter speed dial is at "A" or manually set to 1/125 sec. and above. However, if the dial is manually set to 1/80 sec. (X) or below, the flash unit synchronizes with the shutter speed selected.

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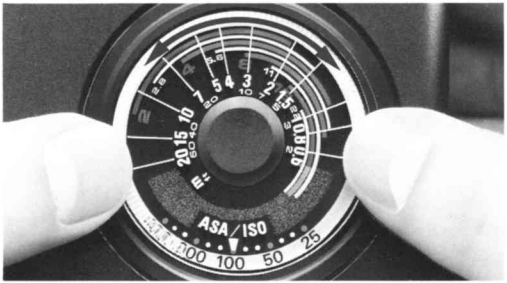

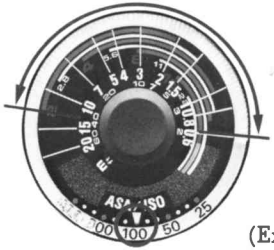

(Ex. 1)

Exposure Calculator Dial ③

For Automatic Operation

The SB-12's exposure calculator dial helps you select the usable range of f/stops for the speed of the film in use and the camera-to-subject distance. On the dial there are eight f/stops to choose from. Each f/stop determines the usable distance range in which you can obtain the correct automatic exposure. The automatic shooting range for each f/stop is indicated by a color-coded line ①. When the subject distance remains the same, the larger the aperture selected, the less the depth of field in the final photograph, and the maximum shooting distance is greater, but the recycling time of the speedlight is shorter. On the other hand, the smaller the aperture, the greater the depth of field, but the recycling time is longer and the maximum shooting distance is less. Therefore, in choosing an f/stop, all these factors should be taken into consideration.

The following two examples explain how to use the exposure calculator dial:

Example 1

If you are using ASA/ISO 100 film, you can shoot subjects at distances from 0.6m to 12m (approx. 2ft to 40ft) at the respective f/stops shown in the table.

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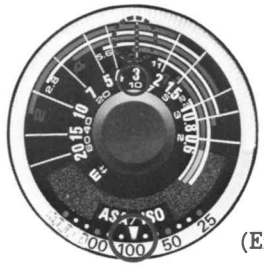

(Ex. 2)

Table Unit: m (ft)

f/stop	Film sensitivity (ASA/ISO)					Auto shooting range	
	400	200	100	50	25	Normal Operation	With Wide-Flash Adapter SW-4
	2	—	—	—	—	4~15 (13.1~49.2)	3.6~15 (11.8~49.2)
	2.8	2	—	—	—	3~15 (9.8~49.2)	2.7~12 (8.9~39.4)
	4	2.8	2	—	—	2~12 (6.6~39.4)	1.8~8.8 (5.9~28.9)
	5.6	4	2.8	2	—	1.4~8.8 (4.6~28.9)	1.3~6.2 (4.3~20.3)
	8	5.6	4	2.8	2	1~6.2 (3.3~20.3)	0.9~4.4 (3.0~14.4)
	11	8	5.6	4	2.8	0.8~4.4 (2.6~14.4)	0.8~3.1 (2.6~10.2)
	16	11	8	5.6	4	0.7~3.1 (2.3~10.2)	0.7~2.2 (2.3~7.2)
	22	16	11	8	5.6	0.6~2.2 (2.0~7.2)	0.6~1.5 (2.0~4.9)
	—	22	16	11	8	0.6~1.5 (2.0~4.9)	0.6~1.1 (2.0~3.6)
	—	—	22	16	11	0.6~1.1 (2.0~3.6)	0.6~0.8 (2.0~2.6)

Example 2

With ASA/ISO 100 film and a subject three meters (approx. 10ft) away, you can shoot at any aperture from f/2 to f/8. If a short recycling time is preferable, use f/2. If greater depth of field is desired, use f/8. A good compromise is f/5.6.

Once you've selected the appropriate f/stop for the film in use, set this on your lens and fire away. Your pictures will come out properly exposed.

For Manual Operation

Simply read off the f/stop which is opposite the distance ② from camera to subject; then set this aperture on your lens.

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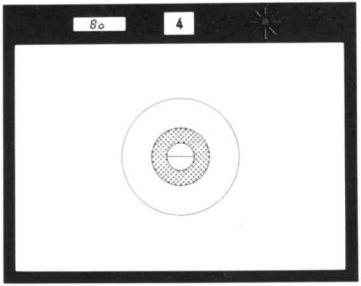

Ready-Light ⑧

Built into the back of the SB-12 is a ready-light which comes on as soon as the speedlight is recycled and ready to fire. Another ready-light also appears inside the camera's viewfinder at the same time. Thus, without removing your eye from the eyepiece, you can tell when the flash unit is ready for the next shot. Both ready-lights also blink to warn you of the following conditions: 1) when the SB-12 is not attached properly to the F3's accessory shoe; 2) when the ASA/ISO dial on the camera is not set between ASA/ISO 25 and 400; or 3) when the speedlight fired at its maximum output indicating that the light might have been insufficient for correct exposure. The warning blink is approx. 2 seconds in duration.

Note: *The white plastic plate found in new cameras not only serves to protect the shutter curtains, but also can be used when making test shots with the speedlight. Without film or the white plastic plate in place, the ready-lights blink even if the camera and flash unit are at the correct setting.*

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Open-Flash Button ⑨

Located on the back of the SB-12, the red open-flash button is used to fire the flash unit manually without having to trip the camera's shutter. In this manner, you can create multiple-exposure "stroboscopic" effects or paint the scene with light by firing the speedlight repeatedly with the camera set to "B" or "T." The open-flash button is also used for test-firing the speedlight.

Sync Socket ⑫

Plug one end of the optional SC-11 Sync Cord into this socket and the other end into the camera's sync terminal. Then you can remove the speedlight from the F3's accessory shoe for off-camera operation. Automatic operation is not possible when using the SB-12 off-camera. In this case, set the shooting mode selector to "M" and compute the exposure manually. The sync socket also allows you to connect more than one SB-12 together for multiple lighting setups.

ACCESSORIES

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Wide-Flash Adapter SW-4

This diffuser slides over the SB-12's flash head to increase the angle of coverage from the normal 56° horizontal and 40° vertical to 67° and 48° respectively. This insures that there will be adequate coverage when a 28mm wide-angle lens is used. At the same time, the guide number (ASA/ISO 100 and meters) is reduced from 25 to 18, or from 40 to 28 (ASA/ISO 25 and feet). For the automatic shooting ranges, please refer to the table on page 17.

Sync Cord SC-11 (Not pictured)

For off-camera or multiple-flash lighting set-ups.

"RED EYE"

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This phenomenon, in which a subject's eyes appear red in color photographs taken with flash, results from the flash directly illuminating the retina. To avoid this, ask the subject not to look straight into the camera and, if possible, increase the overall illumination in the area where you are shooting to minimize the opening of the subject's pupils.

SPECIFICATIONS

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Light output control	Automatic: Silicon-controlled rectifier (thyristor) and series circuitry Manual: Full output
Guide number (ASA/ISO 100 and meters)	25 (18 when used with Wide-Flash Adapter SW-4)
(ASA/ISO 25 and feet)	40 (28 when used with Wide-Flash Adapter SW-4)
ASA/ISO film speed range	ASA/ISO 25~400
Angle of coverage	Horizontal: 56° (67° when using SW-4) Vertical: 40° (48° when using SW-4)
Automatic shooting range (ASA/ISO 100)	e.g. 1~6.2m (3.3~20.3ft) at f/4; varies with f/stop selected
Recycling time	Automatic: Variable depending on shooting distance Manual: Approx. 9 sec. with fresh set of zinc-carbon batteries; approx. 8 sec. with alkaline-manganese batteries
Number of flashes	Automatic: Variable depending on shooting distance Manual: Approx. 60 with fresh set of zinc-carbon batteries; approx. 160 with alkaline-manganese batteries
Power source	Four 1.5V AA-type batteries (NiCd batteries may be used)
Ready-light	Provided
Open-flash button	Provided
Mounting	Directly on F3 accessory shoe
Dimensions (excluding mounting foot)	105mm(W)×40mm(H)×85mm(D)
Weight (without batteries)	350g